GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, AUGUST 24, 1892.

TABLE OF CONTENTS.

PAGE.

EDITORIAL ARTICLE:—A National Forest-policy 397
The Temperate House at Kew. (With figure.) . . . . . *W.* 398
Overland in the Cayuga Country.—I. . . . . *Professor L. H. Bailey.* 398
In the Woods of Eastern Texas . . . . . *E. N. P.* 399
Climbing Plants in the Pines . . . . . *Mrs. Mary Treat.* 400
NEW OR LITTLE-KNOWN PLANTS:—New Orchids . . . . . *R. A. Rolfe.* 400
FOREIGN CORRESPONDENCE:—London Letter . . . . . *W. Watson.* 400
CULTURAL DEPARTMENT:—Notes on Shrubs . . . . . *J. G. Jack.* 402
The Wild Garden in August.—I . . . . . *M. Barker.* 403
The Water-garden . . . . . *Wm. Tricker.* 404
Francoa ramosa, Melianthus major . . . . . *E. O. Orpet.* 404
Tradescantia Warscewicziana, Costus igneus . . . . . *R. Cameron.* 404
CORRESPONDENCE:—Some Questions About Taste . . . . . *Mrs. J. H. Robbins.* 405
Plant-labels . . . . . *C. B. W.* 405
MEETINGS OF SOCIETIES:—The Florists at Washington: The President's Address. 406
Fungous and Other Rose Troubles . . . . . *Professor Byron D. Halsted.* 406
Floriculture for Children . . . . . *Robert Farquhar.* 407
NOTES 408
ILLUSTRATION:—Central Walk in the Temperate House at Kew, Fig. 67 401

A National Forest-policy.

IN the closing days of the last session of Congress, Senator Paddock's bill "to provide for the establishment, protection and administration of public forest-reservations and for other purposes" was reported favorably to the Senate, and although it was impossible at that late hour to secure any action upon it, the bill was placed on the calendar ready to be called up at the beginning of the next session. In the executive machinery authorized by this act there may be some details about which opinions will differ, but this could be said of any act devised for this purpose, for it is hardly possible that a complete and entirely satisfactory forest-policy could be inaugurated at once. A perfect policy can only be developed after years of careful experience; but, inasmuch as we have no policy whatever, what is now needed is a measure which will secure some comprehensive preliminary work with the broad outlines of a general system, and these requirements are fairly met by the present bill.

We have said that the country has no forest-policy, and we are reminded by the very interesting report which has been printed with the bill that the Government does not know with any accuracy how much forest-land still remains in the public domain, and it knows even less about the quality and quantity of the timber which is now standing on that land. The most accurate statement which can be made now is that the United States Government holds an area of something less than seventy million acres designated as woodland, and mostly situated on the slopes and crests of western mountain-ranges, and no more definite knowledge can be had without long and laborious investigation. This property of unknown extent and value is left without any proper administration, to be ravaged every year by fires and by illegal and wasteful cutting. Some special measures for managing these forests have been enacted, it is true, but they have proved rather detrimental than otherwise, and it is confessed in a public document that the impossibility of securing, in a straightforward and honest way from the Government, either timber or timber-bearing lands, has compelled the citizens of nine states and territories to become criminals if they take the timber which is necessary to enable them to exist. It has been asserted that more timber has been burned in a single year than has been legitimately used since the settlement of the country, but even if this is an exaggeration it is true beyond question that we are squandering our inheritance at a ruinous rate, and that unless this reckless destruction is arrested we shall, in a short time, not only be without a sufficient amount of timber for the economical uses of the country, but we shall suffer a long series of ever-increasing disasters which, as experience has demonstrated over and over again, will certainly follow if the forest-cover is removed from the sources of our great rivers.

Now, whatever is true as to the influence of the forest-area upon climate and meteorological phenomena, it is agreed by all authorities that a forest-cover exerts a salutary influence upon the water drainage and soil conditions. The French Government has already spent $35,000,000, and expects to spend still more than this amount in the future, to repair the damages done by deforesting the mountains of that country, and it certainly is the part of wisdom to be warned by such an example. Fortunately, a forest need not become unproductive because it is held permanently to preserve the conditions of soil and water, which make agriculture and even existence possible over large areas. Under proper management our present forest-resources can be maintained and even grow in productiveness every year, but this is not possible so long as the forest is under private ownership. The fact that a crop of timber requires, at least, half a century for its development shows the necessity of stable ownership and a conservative system of management. A forest-policy worthy of the name must be organized and administered in the interest of coming generations, and the state, which never dies, can alone be trusted with interests in the distant future. Beyond all dispute, then, the forests on non-agricultural lands of the national domain should be held as the property of the whole people forever.

The new law provides, in the first place, for a survey, to determine the extent and location of all forest-lands, after which the President is to withdraw from sale and entry all such lands except those that are found to be more valuable for agriculture than for forest-reservation. These non-agricultural timber-lands are to be transferred from the Department of the Interior, where lands are held only for disposal, to the Department of Agriculture, which is designed to look after cultural matters, and where a bureau in charge of forestry-matters exists. To save expense at the beginning, and to create as quickly as possible an efficient protective service, the army may be employed for this duty, as it has already been used in the Yellowstone and California parks. There is no occasion here to explain the provisions for cutting timber under license, or for the creation of a force of officers to attend to the business of forest-administration proper. It is only necessary to add that the system proposes a separate and complete administration, to be carried on by competent men under expert advice, and the principle is steadily kept in view that while the service of protecting water-sheds is of sufficient national importance to warrant expenditure out of other funds, nevertheless this service should be made to pay for itself by the sale of surplus forest-material.

In short, the immediate effect of the bill will be to ascertain just how much timber-land the Government has and where it is situated, the withdrawal from sale by the General Government of all such land and its protection by the army until a complete and effective forest-service can be organized. It is to be hoped that the meetings of the various scientific associations during this summer and autumn, as well as the conventions representing the various branches of horticultural and agricultural effort, will bring

to bear their collective influence upon members of Congress and urge the passage of this bill. A bill which has advanced no further than a favorable report in one house of Congress has many risks to run before it can become an operative act. This is the first time, however, after years of petition and entreaty, that a bill so good as this has ever been placed on the calendar, and if every man and woman in the country who has this cause at heart would make a personal effort to convince his or her representative in Congress of the desirableness of the legislation proposed, there is little doubt but that the law could be enacted during the next session of Congress.

The Temperate House at Kew.

THE temperate house, or winter garden, at Kew is one of the largest and handsomest plant structures in Europe. It was built thirty years ago from designs by Decimus Barton, the architect of the Kew Palm-house. Only a portion of the original design has been carried out, but it is still hoped that the whole will be completed. When this is done the whole building will consist of a centre connected with two wings by two small octagons. The centre and octagons, which were erected thirty years ago, are devoted to the cultivation of Australian, south African, Mexican, south European and Asiatic plants which thrive in a temperature from which frost is excluded. The centre is 212 feet long by 137 feet in width, and it is sixty feet high. Except the plants on the shelves against the walls of the house, the whole of the collection is grown in long parallel beds three to four feet deep. The main features in the house are the Tree Ferns, Palms, Acacias, Sikkim Rhododendrons, Camellias, Araucarias, Dammaras, etc. Such plants as Araucaria excelsa, A. Bidwillii, A. Brasiliensis, Dammara robusta, D. australis and D. Moorei, Cyathea medullaris, Seaforthia elegans, Chamærops Fortunei, C. humilis, C. Martiana, Camphor, Podocarpus elongata and P. Totara are represented by exceptionally large specimens, some of which almost touch the roof. The central walk, of which a view is shown on page 401, is bordered with Tree Ferns, Bamboos, Palms, Musa Basjoo and similar plants of striking appearance. The charm of this house is in its comfortable temperature at all times of the year, the natural arrangement of the plants and their generally robust health. A catalogue of all the species grown in this one house would surprise many people by its length and comprehensiveness. A gallery surrounds the house inside, and from this may be obtained a good view of the grand Tree Ferns, Palms, etc., which can scarcely be seen from the ground.

London. *W.*

Overland in the Cayuga Country.—I.

IT was a bright morning in July when I drove down the great University Hill, at Ithaca, for a trip over the plateau which lies between Lakes Cayuga and Seneca. Rain had fallen a day or two before, and all the hill-sides stood out in the glory of a bountiful harvest. The great West Hill, which rises 800 feet above the valley beyond Cornell University, presented a maze of patch-work blocks and colors. Far up toward its crest the continuous green marked the region of hay; farther down, the irregular blocks and colors indicated wheat and barley and oats, each spreading a different hue under the steaming morning sun, and still farther down were blocks of orchards, in which the rows of Apple and Pear trees looked like the Currant-bushes in my garden, while the lines of Grapes were only distinct enough to add a seamed appearance to the hill-side. This alternation of the farm-crops is not accidental to the great West Hill at Ithaca, for one sees it, or something like it, in all countries where small lakes and rivers lie among the hills. The fruits love the protection of the water, and the orchards and vineyards and berry-gardens may be seen everywhere among these inimitable New York lakes lying far down the slopes next the water's edge. Nor is this the only advantage which the fruits obtain by this proximity to the water; they are nearer the means of transportation, and their owners are thereby brought into more frequent and intimate contact with their fellows. It is undeniable that the fruit-grower is usually a better-"posted" man than the general farmer. His environment educates him. He must deal with his products quickly and systematically; he must know the markets, and he must contend with almost innumerable pests. The visits of the commission-house agents keep him in touch with the outside world, and the daily or weekly returns from his salesmen drill him in correspondence and business. The grain-farmer hauls his wheat to the elevator and receives his pay in cash, but the fruit-grower depends upon the mails for his returns, and in proportion as the farmer patronizes the post-office does his education grow. So the fruit-grower receives a telegram from his salesman, and takes it as a matter of course, but a telegram going to an ordinary farm-house is usually a signal for anxiety.

This hill rose in front of us, while to the north stretched the blue waters of the beautiful Cayuga. If the reader will consult an atlas of New York he will be reminded that several lakes lie nearly parallel with each other in the central western portion of the state. Of these lakes Cayuga is the largest, stretching out forty miles in length and in one place reaching a width of five miles. But, horticulturally, it is not the most important, for Seneca and Keuka strive for the honor of sheltering the most Grapes, Plums, Peaches, Apricots and Quinces. At the southern extremities of these three lakes the hills are high and steep, and the creeks have worn deep gulches in the soft slate. Some of these gorges are veritable cañons, like the Ithaca gorge at the head of Cayuga, whose walls rise bold and sheer to a height of over 200 feet, and often they are marvels of intricacy and beauty, like the world-famed Watkin's Glen at the head of Seneca. Toward the north the shores slope softly away into low and fertile plateaus. It is this table-land between Cayuga and Seneca lakes that we are to cross. We leave Ithaca at the head of Cayuga, and if we have no mishap shall reach Geneva, at the foot of Seneca. In the mean time we shall have passed over a country famous in the early days for its fertility, and shall reach the borders of one of the most remarkable horticultural regions upon the American continent.

For five or six miles we rise upon West Hill nearly parallel with the lake, and the deep blue waters, with the great university beyond, lie farther and farther below us, like a huge mirror reflecting the sky and hills. Meantime, we have passed through most of the horticultural region, which, at best, is small in the neighborhood of Ithaca, and it is mostly of a local interest. Yet there is no good reason, barring the indifference of the inhabitants, why this hill-side should not become as fruitful as similar slopes upon Seneca and Keuka lakes; and some day this must come to pass. Here are some old orchards, however, especially some dwarf Pear-orchards, which were planted under the inspiration of the Downings, and which, after the lapse of twenty and thirty years, are still thrifty and productive. But there is now abundant evidence that dwarf Pears are comparatively long-lived, although the notion to the contrary is everywhere present. The famous Yeomans Orchard, in Wayne County, is now nearly forty years old, and still in the full tide of its vigor. But dwarf Pears need better attention than most people give, and, therefore, few succeed well with them. I am convinced that one of the most important elements in the successful cultivation of them is to head them in annually at least half or two-thirds of the new growth. This process keeps the top low and greatly lessens the tendency to break from the Quince stock. About Ithaca this low heading is seen, trees which are thirty years old standing not over eight or ten feet high.

But the most significant features of the country we are now traveling are the signs of approaching age. Here is a Peach-orchard standing stark against the sky, every limb having died years ago from sheer old age; and there is a dwarf Pear-orchard, which was once the pride of the neighborhood, grown into a seared and mossy tangle, with here and there a Quince-bush to mark the spot where some pear has fallen. And this Pear-orchard is doubly sad, because we have but recently passed one as old which is in good health. The old Apple-orchards are a marvel. They are the relics of the early days, fifty and even seventy-five years ago, when the virile young farmers built the long walls and the wide-gabled houses. Now they are tall and gaunt, and, their fruitage having failed through years of neglect, the owners have trimmed them up with axe and saw until their scarred and crooked trunks often rise ten or twelve feet high. They have long since outgrown their usefulness, and the best spray can scarcely penetrate their thick and lofty tops. Wise economy would have planted other trees long ago, and these would have been consigned to the kitchen-stove when old age first showed itself. But young orchards

are seldom seen, and the growers complain that apples no longer pay! Why is it that farmers can understand a Wheat-field, or a Potato-patch, but cannot learn the first lesson in tree-culture? Why is it that year after year they drag through the twelve months with no respite of shade or fruit and pass down to their successors only a bare and burdened farm?

Some of these old orchards bear profusely in occasional years, but the fruit is poor, being largely natural or seedling varieties, and the labor of picking from the tall and scattered trees is greater than the fruit is worth. I have a mind to stop at every farm-house and urge the people to cut down the old orchards; but no! that would be cruel. Better leave something to warm the hearts of the growing boys and girls and to give them some fragrant memories of the old farm, for I take it that most of them will leave it in due time.

But I am not saying that this is a poor or infertile country. I have only tried to say that there is little evidence of new purpose, for when the old trees pass away the orchards will be gone. We shall not travel far over these hills until we find evidences of the new life which freshens the soil and adds a new interest to the old farms. These farms which we are now passing, let it be said, grow as big crops of wheat and hay as they did in the early days, but the products must be wrung from the soil by greater effort. It is not true that the soil is exhausted in these lands which fifty years ago were the Wheat-fields of the west. Wheat-lands have given way to stock and the dairy in many cases, and yet Wheat is the staple, and finer crops of it never grew on the prairies of Illinois or Dakota than we are now passing along the road from Jacksonville to Trumansburg. We now lose sight of the lake except at intervals, and we find ourselves well up on the tops of the hills, ten miles from Ithaca. It is a beautiful country. The soft hills roll onward to the sky-line, ribbed by ravines and veneered here and there by rectangular wood-lots, and everywhere strapped together by the winding roads. Broad quiet valleys run off here and there. The road-sides are freshly mown, for it is now haying-time, and their flowing outlines add the finish to pleasant country scenes.

The little hamlets along the way all bear the flavor of earlier days. The taverns at the four corners with porch touching the street, and the old open sheds and weather-beaten barns at the side, are reminders of the stage-days; and the village fathers still loaf about them with stories of their youth. Jacksonville is one of these hamlets, and it is particularly interesting to us, because the so-called original tree of the King of Tompkins County apple stands here. This is in Tompkins County, whence the apple got its name, and every gray-haired man will tell the story of the old tree. Nevertheless, none of them know its true history, and I, too, for obvious reasons, will not tell it. But the tree is grafted, and the grafts appear to have been brought from the lower Hudson River region early in the century. There the apple was known as the Flat Spitzenburgh, and its origin appears to be lost. Several persons brought grafts from this region to Tompkins County, but this tree at Jacksonville is the oldest one left, and it is the one from which most of the stock has been distributed. It is two feet in diameter and is still vigorous.

Cornell University. *L. H. Bailey.*

In the Woods of Eastern Texas.

THIS part of Tyler County is a hundred miles from the Gulf of Mexico, and nearly as far from the west line of Louisiana —that is, it is about on the thirty-first parallel, and in longitude about 34° 30′. Geologically, this is in the older part of the newer Texas. With the exception of the large rivers that rise in the highlands northward and westward, the county is watered by numerous small spring-fed brooks, and sometimes small bogs occur. The soil is generally sandy and light, almost sterile in places. When mixed with alluvial deposits it becomes black and highly productive. It is well adapted to the cultivation of Pears, Peaches, Strawberries and garden-vegetables. Doubtless, in eastern Texas, as elsewhere, soils occupied by coniferous forests will become better after clearing by age and cultivation. Along the sandy banks of the little brooks the handsome little Mayaca is common. In some localities we see the tall yellow trumpets of Sarracenia flava, and in the small sphagnum-carpeted bogs Utricularia cornuta abounds with Calopogon pulchellus, Pinguicula pumila, a Xyris, and the queer, glistening red leaves of some Sundew not yet in blossom.

In the Pine-woods the pretty Polygala polygama is very common, and more rarely its more southern cousin, P. lutea. Aristolochia reticulata is often seen, and very rarely in Texas, as my experience goes, is the northern A. serpentaria found among its neighbors. These species both have aromatic roots, and doubtless the same medicinal properties.

Of shrubs, Stillingia ligustrina and one species of Myrica, if not two, are everywhere. So Itea now displays its racemes of rather handsome but scentless white flowers. The Silver Bell (Halesia) and Chionanthus blossom much earlier. By the way, Snow-flower, as its generic name signifies, would be a more euphonious as well as a more significant common name than Old Man's Beard, or Fringe-tree, for the well-known last-named species.

But I set out to write of the Silva of eastern Texas. The sandy land is principally occupied by Pinus mitis and P. tæda. Pine-forests are pleasant, but weird places withal to visit. Their tall columnar trunks, needle-like leaves, the peculiar soughing of the winds in their tops, such as is heard in no other forests, and their dislike for other forms of vegetable life, fill the visitor with an awe amounting almost to reverence. But one is glad to visit these primeval Pine-woods, because their existence in some forms runs back in time far beyond that of most of their deciduous neighbors, and yet one is saddened by the thought that the whole class of conifers are being destroyed by a short-sighted extravagance which, in a few years, will render a large Pine-tree as much of a rarity and curiosity as a Sequoia is now. Pine-trees here are not large, rarely becoming two feet in diameter, but they are tall, straight and handsome.

Here along the creek-bottoms are tracts of Beech-trees that would do credit to a New York forest. Beech is not only a stately tree, it is also a staid one. Though common in our original forests from New Brunswick to Wisconsin, and southward to central Florida, and in Texas to within reach of the salty breezes of the Gulf, yet the tree is everywhere itself.

We can count at least a half-dozen species of Oak, Quercus aquatica being the most abundant species; that species is set down in the books as a small tree. Near Nacogdoches, Texas, I measured one that was over twelve feet in circumference. At Arkadelphia, Arkansas, I met with individuals still larger and proportionally tall.

With the northern Hickories, Sugar Maple, Red Maple (small form), White Maple, White Ash, American and Slippery Elms, Ostrya, Carpinus, River Birch, Basswood, Alnus serrulata, Flowering Dogwood, Black Cherry, Witch-hazel, Box-elder, and the vicious Rhus vernix, which has not left its poisonous effluvium north, as a wrapped and swollen hand bears painful witness, growing everywhere around him, with sphagnous bogs and the Partridge-berry common in the Pine-woods, one would almost fancy that he was in a northern forest. But the strong, sweet odor of the Evergreen Magnolia mingled with its less pretentious but hardly less handsome and odorous deciduous congener, M. glauca, and the presence of Sweet Bay (Persia), Wild Peach (Prunus), of Ulmus alata, Planera, Chinquapin, Holly and Cassine recalls his wandering, and leaves him in the woods of eastern Texas. The Evergreen Magnolia, as it is usually seen in its native woods, is a very plain tree, with coarse, scattered branches, and bark becoming rough and scaling with age. In thinner woods and open fields it thickens up and becomes, at its best, the handsomest and most conspicuous forest-tree of its range. It sometimes attains a diameter of over four feet, and reaches a hundred feet in height. The species crosses the ninety-sixth meridian in Waller County, which is about its western limit. The most northern locality where I have seen the species growing in cultivation is Fayetteville, Arkansas, near the thirty-sixth parallel. Magnolias have lived there in apparent health for many years, though the mercury sometimes sinks to eight or ten degrees below zero. Holly grows in the gardens of Fayetteville with Magnolia, but not so vigorously.

Some botanical writers in describing Ilex vomitoria limit its range to a distance of twenty miles from the Gulf-coast. Nature is kinder and more liberal to the species, and allows it to grow in great abundance at least a hundred miles from the Gulf. So far as I can learn, no one is using an infusion of the leaves of Cassine as a substitute for tea. Some people did use them in that way during the privations of war, as they may have used seeds of Sesbania Cavanillesii as a substitute for coffee, and Mesquit-beans instead of wheat and corn for bread. But it is hardly fair to accuse southern people of committing such foolishness now.

Two weeks later than the date of the above notes, I saw in the San Jacinto valley, west of Conroe, nearly the same forest-growth. Sugar Maple, Beech, Witch-hazel and Rhus vernix had, however, been left behind.

Bastrop, Texas. *E. N. P.*

Climbing Plants in the Pines.

We have two distinct forms of Ampelopsis in the Pines. One has larger leaves than the other, of a lighter green, and the venation is much more marked in the larger form, while the flowers, which appear early in June, are about the color of Grape-blossoms. The smaller-leaved one begins to flower about the middle of July and continues in bloom until August. The buds and flowers are a dark purple color. It blossoms much more profusely than the other, is quite handsome, and attracts a great many insects, especially honey-bees. The leaves are very smooth, of a leathery texture, and dark bluish green in color. I found it in the Pines and transplanted it in my garden some five or six years ago, where it now covers a low-headed Apple-tree. I recently sent fresh specimens of both forms to Professor Sargent, who says of the late-flowering Ampelopsis "that it is certainly a curious-looking vine and ought to be transplanted to the Arboretum to see how it will behave there."

What a pity that Rhus Toxicodendron is poisonous. It is often confounded with Ampelopsis by those not versed in the scientific knowledge of plants. Others more observing, but not learned in botany, call both vines Ivy. Ampelopsis is the Five-leaved Ivy and not poisonous, while the other is called Three-leaved Ivy (Mercury), and known to be poisonous to many people. But how handsome it is in the Pines, clothing old decaying trees with thick overlapping foliage.

The wild Grape-vines, too, are handsome. One large vine often forms a sort of arbor by clambering over the tops of two or three small trees. Nothing can be more charming than these bowers often are; sometimes, however, the rampant vigor of the vine overburdens and oppresses the trees which support it in a way that excites our pity.

Very fragrant, too, with a spicy distinctness quite their own, are the blossoms of these wild Grapes. It has a genuine North American odor, and belongs as truly to this western world as does the breath of Indian Corn-tassels in an August evening. Compared with it the odor of garden Grape-flowers is tame and spiritless.

The Virgin's Bower (Clematis Virginiana), the most graceful of our wild vines, is now covering wayside shrubs with its snowy bloom, and its downy gray seed-clusters will be still more beautiful until late in autumn.

I occasionally see the Trumpet Creeper (Tecoma radicans) in damp places in the Pines and along country road-sides; but whether the winged seeds have been wafted from cultivated plants, or whether it is truly indigenous here as it is in Pennsylvania and in the southern states, I cannot tell. I only know that I never saw it in the early days of our settlement. But when planted it grows most luxuriantly and has to be kept in check, or it would soon swamp everything in its neighborhood.

The Bittersweet (Celastrus scandens) clambers about here and there in damp places, becoming very decorative in autumn, when its orange-colored pods open and show the bright scarlet seeds. The Trumpet Honeysuckle (Lonicera sempervirens) we also find, and it is almost evergreen with us. It is a handsome vine both in flower and fruit, and is quite extensively cultivated; but for the past few years it has been so badly infested with aphides that almost everybody has discarded it here. Strangely enough, I have never found the wild plants molested by these insects.

The Smilax must not be forgotten. Indeed, one who has attempted to penetrate our damp thickets will not be likely to forget it. S. rotundifolia and S. tamnoides are the most to be dreaded. The tangled masses, armed with stout prickles, climbing triumphantly over shrubs and trees, completely bar the way to many choice plants. And yet how handsome one of these plants can be made, especially S. tamnoides, with its bright shining evergreen leaves and clusters of black berries that remain all winter. And S. Walteri is also found here. This, too, has evergreen leaves, coral-red berries, and few or no prickles. It is a charming vine, and should be in cultivation.

Our Wild Yam is a graceful vine, neat and pretty, much more delicate than the Chinese Yam, which is sent out under the name of Cinnamon Vine. The Canadian Moonseed (Menispermum Canadense) is another delicate twiner, with pretty foliage and curious large stony seeds in the form of a crescent. Apios tuberosa is everywhere in the damp Pines, trailing over shrubs and bushes. In August and September it has thick, compact, dense racemes of brownish purple pea-shaped blossoms which are quite fragrant. But it spreads rapidly by underground stems, which are strung with roundish tubers, each tuber sending up twining stems.

We have one twiner in the Composite family—Mikania scandens—which we find in damp places, climbing over bushes. It has heart-shaped leaves and panicles of pinkish colored flowers. It begins to bloom in July, and I have often found good clusters of flowers as late as October.

Some three or four species of the curious twining leafless Dodder are in the Pines. These plants start in life like all well-behaved vines, taking their nourishment, as in duty bound, from mother earth, but they soon become demoralized, yielding to temptation and let go their hold of earth and closely twine around their nearest neighbors, upon whom, like true parasites as they are, they henceforth wholly depend for nourishment and support.

Vineland, N. J. *Mary Treat.*

New or Little-known Plants.

New Orchids.

Cattleya Victoria Regina, O'Brien.—A handsome Cattleya, allied to C. Leopoldii, with large rosy purple flowers. The lip is three-lobed. It was imported by Messrs. F. Sander & Co., of St. Albans, and was awarded a first-class certificate by the Royal Horticultural Society on May 3d last. It is described in the *Gardeners' Chronicle* for May 7th, p. 568, and figured in the same work on June 25th, pp. 808, 809, figs. 115, 116.

Odontoglossum Andersonianum pulcherrimum, O'Brien.—A brightly colored form of the very variable series of natural hybrids between O. crispum and O. gloriosum, which are variously known in gardens under the names of O. Andersonianum, O. Ruckerianum and O. hebraicum. It may be briefly described as a darkly colored O. Ruckerianum. It flowered in the collection of R. B. White, Esq., of Arddarroch, Scotland.—*Gardeners' Chronicle*, May 7th, p. 586.

Odontoglossum platycheilum, Weathers.—A distinct and elegant species, with large, rather flat, white flowers, the lip being beautifully spotted with rosy purple. It flowered in the collection of R. I. Measures, Esq., of Camberwell, and received an award of merit from the Royal Horticultural Society on March 22d last. Strange to say, nothing is known of its origin, the only plant known having been acquired at the sale of the Downside collection.—*Gardeners' Chronicle*, May 7th, p. 587, fig. 84.

Lælio-Cattleya × Phœbe, Hort.—A handsome hybrid raised from Cattleya Mossiæ crossed with the pollen of Lælia cinnabarina. The flowers are of a rich Indian yellow, with the middle lobe of the lip deep purplish crimson. It was exhibited by Norman C. Cookson, Esq., of Wylam-on-Tyne, at a meeting of the Royal Horticultural Society on May 3d last, and was awarded a first-class certificate.—*Gardeners' Chronicle*, May 7th, p. 598, also June 18th, p. 781, fig. 114.

Lælia × Latona, Hort.—A handsome hybrid raised from Lælia cinnabarina crossed with the pollen of L. purpurata. It is like a small form of the latter, with deep yellow sepals and petals, and a dark crimson lip. It was exhibited at a meeting of the Royal Horticultural Society on May 3d last, and received a first-class certificate.—*Gardeners' Chronicle*, May 7th, p. 598, also June 18th, p. 791, fig. 114.

Kew. *R. A. Rolfe.*

Foreign Correspondence.

London Letter.

Aristolochia gigas, var. Sturtevantii, is the great attraction at Kew this summer. It is grown in the Nymphæa-house, trained along the rafters so that the flowers hang over the water. What extraordinary flowers they are! There were five open one day this week, all very large and richly colored. Visitors are puzzled by them and are sometimes doubtful of their genuineness, as they are sometimes of the Cacti, which are supposed by some to be made of wood and cunningly painted. An artist friend said the Aristolochia-flower was a lady's calico sun-bonnet. We are very grateful to Mr. E. D. Sturtevant for this

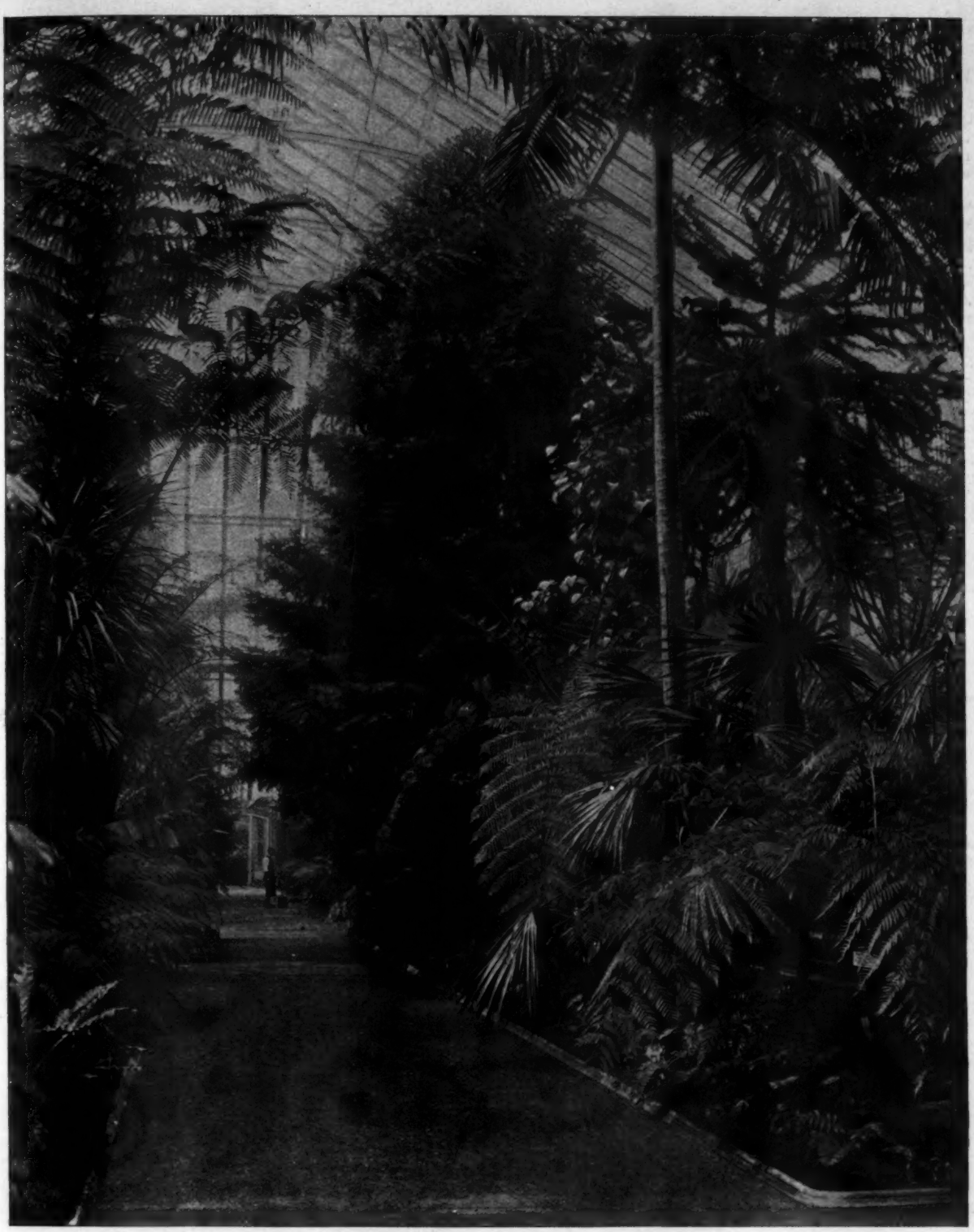

Fig. 67.—Central Walk in the Temperate House at Kew.—See page 398.

plant, which is vastly superior to the type as named and figured by Lindley. Moreover, it is as easily cultivated as an Allamanda, and the disagreeable odor of its flowers is easily counteracted by having in the same house with it such powerfully fragrant flowers as Hedychiums, Stephanotes or Gardenias. This plant has already been widely distributed from Kew. It is certainly one of the most interesting of all cultivated tropical plants. I might mention

that it is easily propagated from cuttings of the half-ripened shoots. Other large-flowered Aristolochias in flower now are A. ornithocephalus, A. hians, A. tricaudatus, A. elegans and A. ridicula. A collection of tropical species of this genus would be a most interesting feature in any large stove. Another large-flowered species, namely, A. gigantea, is now in cultivation, and will probably soon be available for collections generally. It has flowers nearly as large as those of A. gigas, Sturtevantii, but differs in habit, foliage and the absence of a tail.

Lælia monophylla is a charming little species which was first introduced from Jamaica, where it is a native, to Kew in 1882, where it is now flowering freely. It is the smallest of all the Cattleyoid Orchids, the pseudo-bulbs being no thicker than a knitting-needle, three inches long, bearing a solitary leaf of the same length and a drooping one-flowered scape. The flower is one and a half inches across, not unlike that of L. cinnabarina in form, but more elegant, and colored rich orange-scarlet. A plant in a three-inch basket bearing five opened flowers is a picture. In Jamaica it is found at a high elevation, a fact which accounts for the preference the plant shows under cultivation for the conditions afforded in the cool Orchid-house along with the Odontoglossums, the temperature of the Cattleya-house being too high for it. It has been described under the name of Trigonidium monophyllum.

Lilium longiflorum, var. Formosanum.—This is one of the most beautiful of all Lilies. It may be described as L. Harrisii (the Bermuda Lily), with a narrow band of red-brown down the centre of each segment. It is very elegant, powerfully fragrant, and as easily cultivated as the Bermuda Lily. It is hardy in England, a good greenhouse plant, and at the same time, probably, is at least as suitable for tropical countries as any other Lily. For the trade growers of L. Harrisii it is probably a gold mine. I have lately seen a batch of about five hundred plants of it, which are the produce of the seeds of one plant ripened last autumn, and almost every one of these yearling seedlings is now producing a full-sized flower. The other forms of L. longiflorum, such as Takesima, Brownii, Eximium (Harrisii) and Chloraster, are all in flower now. There can be no longer any reason for keeping L. Brownii up as a species distinct from L. longiflorum. Among the plants of the variety Chloraster lately sent to Kew from Western China by Dr. Henry there are some very similar to Brownii, others approximating to L. longiflorum, and others suspiciously like L. Wallichianum. All the above-named are good garden Lilies, the most refractory being, perhaps, L. Takesima and L. Brownii, while Eximium and Formosanum are the best.

Hydrangea paniculata, var. grandiflora, and Campanula pyramidalis well grown and in flower make, when arranged together, a most beautiful group in the conservatory. They are both hardy, of course, and both easy of culture, but, like many other plants of the same category, they pay for special treatment. The Hydrangea is greener and healthier in foliage, and larger and purer in flower when grown in pots and flowered under glass than it usually is when planted permanently in the open border. A group of these two plants in the Conservatory at Kew is greatly admired. The Campanulas are five feet high, and each plant has from three to five crowded spikes of rich blue flowers. The Hydrangeas are bushes a yard high, with from six to twelve grand trusses of pure white bloom.

Bedding Begonias.—The valuable qualities of the Begonia for summer-bedding have only recently been discovered. The tuberous kinds are now almost as prominent a feature in the flower-beds as the Scarlet Geranium, and, judging by the numerous new sports now on trial at Chiswick, their popularity is likely to increase. Among the latter I noted the following as distinct and useful: Multiflore l'Avenis (Lemoine), plant only four inches high, with numerous spreading racemes of double crimson flowers; Madame Louis Urban, a deep pink-flowered variety, similar in habit to the preceding, and Rosa multiflora, a still paler pink of the same character. Besides these there were six other kinds of very dwarf, small-leaved, free-flowering bedding Begonias, all from Monsieur Lemoine, of Nancy. B. semperflorens rubrum, Vernon's variety, and Crimson Gem are two names for a plant which is likely to become a favorite as much on account of the rich Beet-like purple assumed by its foliage when exposed to full sunshine as for its numerous rich crimson flowers. All the Semperflorens Begonias are good bedding plants, although only few people appear to be aware of that fact. One might ask what is there that would not thrive in the open air in summer if good weather could be assured. I have seen Acalyphas, Cassias, Bouvardias, Zephyranthes, Hymenocallis, New Zealand Veronicas, Plumbago Capensis, all used with good results as bedding plants. It is astonishing how we cling to pot-cultivation under glass for hosts of plants which would be infinitely happier away from both pots and glass. [Several of the plants named above are not rare as bedding plants in America.—Ed.]

The Herbaceous Border has become almost an established feature now in all good English gardens. It is the cheapest of all styles, and if only a little judgment be used in the selection of the various plants to be grown it is one of the most delightful. Until recently there was no really good herbaceous border at Kew, but one was made this year on one side of a range of houses. It had been a border of mixed shrubs, dull and monotonous as such borders generally are, good enough to screen a wall perhaps, but otherwise of no interest. The shrubs were grubbed out, save only a few evergreens, to provide for winter effect, and such flowering things as Spiræas; the border was widened, trenched and heavily manured. When finished it was twelve feet wide and a hundred and fifty yards long. It is at the present time a grand exhibition of Dahlias, Hollyhocks, Sunflowers, Sweet-peas, Roses, Phloxes, Pentstemons, Stocks, Carnations, Pinks, Antirrhinums, Celsias, Foxgloves, Rudbeckias, Poppies, Pæonies, and other plants. The lawn in front of the border is already worn brown by the visitors who crowd to inspect the flowers. The harvest of bloom began more than a month ago, and it will continue for two months longer. Perennials must, of course, be well represented, but it is astonishing how much of summer-flower glory and variety can be provided by annuals, the seeds of which are sown in spring and the plants never shifted.

London. *W. Watson.*

Cultural Department.

Notes on Shrubs.

AMERICAN amateur gardeners seem to be too ready to accept a popular idea that because Heaths and Heather do not naturally cover our waste grounds or moors, as in the Old Country, they cannot be made to thrive and bloom freely when introduced into the soil of the New World.

We rarely find a Calluna or Erica in an American garden, and yet if given proper conditions they will develop a very satisfactory growth, adapt themselves to their new surroundings, blossom freely in the month of August, when flowering shrubs are rare, and gladden the heart of every Scotchman or other enthusiastic lover of the Heaths of a former home.

Probably one reason for the prevalent idea that Heather cannot be successfully grown, when imported here, lies in the fact that there have been a great many small attempts to transplant them, almost every one of which has failed for some unknown reason. In too many cases full-grown plants have been dug up and brought over the ocean in pots, receiving treatment on the voyage which weakened them and prepared them for early decadence and death when planted in new and unfamiliar ground, and exposed to new climatic conditions. When growing from seed has been tried, the attempts have usually failed on account of a lack of knowledge of the proper planting of the seed and care of the young seedlings. It may, perhaps, be accepted as true that our climate is, as a rule, less favorable to their growth, because of the greater dryness of the air in summer, but there are many places along the sea-coast where the conditions do not seem very different from situations in which the Heather seems quite at home on the other side of the Atlantic.

The severity of our winters is no barrier, for we have the plants growing well without protection in Massachusetts, and it is recorded as growing without man's care on the coast of Maine, in Nova Scotia and Newfoundland. The patches of plants which have been found growing in these stations were once supposed to be indigenous, but, as Dr. Goodale has shown in his interesting article, published a couple of years ago in GARDEN AND FOREST (vol. iii., p. 62), there is reason to believe that all have started since the arrival of European immigrants and owe their existence to the intentional or accidental work of white settlers.

Many of the failures which have attended the attempted cultivation of Heather have undoubtedly been due to planting in unsuitable soil. The roots of plants of this family are generally exceedingly fine and delicate, and they require an open sandy or peaty soil with plenty of moisture; a heavy clay soil is fatal to them. Undoubtedly, the best method of introducing Heather is by means of seed. If one wishes to merely sow the seed broadcast and allow the plants to take care of themselves, a corner of a Cranberry-bog is probably the best place that could be selected, particularly if it is kept free for a time from rank-growing grasses and weeds. The seed may be simply scattered without any attempt at covering, as it is likely to fall into the little interstices in the ground, which will be filled by the first good rainfall. To grow the plants from seed artificially requires some attention and care, and should ordinarily be attempted only in a greenhouse or with the aid of a shaded and glass-covered frame or box. A good soil is composed of about equal parts of clean fine sand, peat and loam, and it should be well drained by having a thick layer of broken pots or brick beneath, with a layer of dead moss or sphagnum between the soil and drainage to prevent choking of the latter.

When the seed is sown it should have the slightest possible covering of fine soil evenly sifted over it, merely sufficient to cover it from sight. It may then be thoroughly watered with a very fine spray, and the surface of the soil should never be allowed to become dry at any time until after the seed has germinated and the little plants have formed good roots, after which they must not be allowed to suffer for want of moisture. It is sometimes a good plan to cover the beds with a layer of damp sphagnum until the seed begins to germinate, and when this period arrives the sphagnum must be removed at once. Shading the bed with a piece of matting placed a little above it answers about equally well for the shelter of the seed-bed and seedlings, and it is necessary to use the matting in shading the young seedling plants where the sphagnum has been earlier employed. After the seedlings are well up the glass may be raised or removed. When the plants are perhaps about an inch high, if growing thickly together, they should be carefully transplanted to fresh boxes or beds of prepared soil, giving them more room for growth; it is well to transplant two or three times before permanently planting out. If the plants are not kept in too active growth late in the summer, and have matured good woody stems, even though very small, they may be safely wintered in a frame by giving a covering of leaves or coarse hay; or if they have been grown in boxes in the greenhouse, they may be placed in a pit for the first winter, after which they may be planted out in prepared beds. If properly cared for, they should form good strong plants in two or three years, ready to begin blossoming and to be planted out where they are to remain permanently.

In a very large proportion of our country the soil is of a limestone or clayey character, where Heaths would be sure to fail unless a bed was specially prepared for them. It should be dug out for from two to three feet in depth and filled in with about equal parts of peat and clean fine sand. Soft or rain water should be used as much as possible when watering; hard water would probably be disastrous to the plants.

Where plants are already available, they may be multiplied with less trouble and more expeditiously by cuttings of the tender tips of the shoots taken at this season, and planted in pots or boxes of sand, or sand and peat, provided with good drainage, kept under glass and reasonably moist. The cuttings may be about an inch long or a little more; they should have the lower leaves removed, and should form good roots before winter. Where only a few plants are wanted from a parent plant they may very easily be obtained by layering. Propagation by cuttings or layers is absolutely necessary in increasing any peculiar form of a species, the Heather (Calluna vulgaris) having furnished several which are perpetuated by European cultivators. Among these there are forms with darker-colored flowers than the type, others with white flowers, while a very pretty form has double blossoms. Then there are forms which have been selected on account of their habit of growth, some being prostrate, others more erect and taller than the average, while such forms as have been named Pygmæa, Foxii and Densa grow in pretty, compact, very dwarf tufts, but produce few flowers. This species of Heath is probably the hardiest and best for northern amateurs to experiment with in this country. After success has been attained in the cultivation of the more vigorous Calluna, other less vigorous and seemingly less hardy species of Erica may be taken in hand with every chance of some satisfactory result and pleasure.

Arnold Arboretum. *J. G. Jack.*

The Wild Garden in August.—I.

THE wild garden is always interesting; it is nearly always beautiful, and its appearance undergoes a complete change every month of spring, summer and autumn. There is a great wealth of yellow flowers at this season, a predominance due to the large number of Compositæ in bloom. Several species of the Rosin Weed (Silphium) make a good display, but, as these are coarse-growing plants, they are out of place in any but large gardens. S. perfoliatum, the Cup Plant, is conspicuous on account of its ten feet of stem and bold ovate leaves. It is massive and striking in strong clumps, the yellow flowers, three inches in diameter, being borne freely at the top of the mass of luxuriant foliage. S. trifoliatum is not so tall by four feet, and its lanceolate leaves are smaller; but its similar flowers are produced in even greater profusion. The Compass Plant (S. laciniatum) is about five feet high, with flowers of a clearer yellow color than any of the others, and four inches across. The laciniate, hoary leaves, on long petioles, are from one to two feet in length, and they give the plant a quite distinct aspect. Some other interesting kinds will not bloom until a few weeks later, and thus their flowering period is prolonged. Large groups of these plants look well on the lawn, and they are admirable when associated with tall shrubs. They like a deep soil, and suffer but little from drought.

Heliopsis lævis, the Ox-eye, is very floriferous and showy, and a good plant for the herbaceous border. The stems attain a height of about four feet, forming a compact, shapely cluster when tied to a stake some inches shorter. The opposite leaves are ovate-lanceolate, of pale green color, and the rich yellow flowers, measuring three inches across, are excellent for cutting. The plant requires no special culture, and thrives well in any soil save that which is excessively light. Lepachys pinnata is similarly attractive and useful. It is hardly so robust as the Heliopsis, but more graceful. The elegant leaves are pinnate, and the drooping, pale yellow ray florets, with the conspicuous black sphere which constitutes the disk, give the flowers an agreeable charm. A large mass of this species is now a pleasing feature of the wild garden, the plants having been allowed to develop in their own way.

It would be difficult to pass the Rudbeckias without saying something in their favor, more especially as one of the species, R. speciosa, the gem of the genus, holds a foremost place among our herbaceous plants. It is from two and a half to three feet high, and absolutely covered with flowers three inches across, the outer florets deep yellow, and the large cushion-like disk dark purple. The leaves are ovate or lanceolate, but now hidden to a great extent beneath the close covering of golden flowers. R. maxima is a decidedly different plant, the stems of which are about five feet high, clothed with oval glaucous leaves (petiolate at the base and clasping above), and bear solitary flowers at the extremity. The cone-shaped, deep purple disk is fully two and a half inches high, the drooping ray florets two inches long, very broad, and of a clear yellow shade. This species is not at all common in gardens, and it well deserves more attention. It is singularly handsome when grown in quantity, and as a border-plant its merit is undeniable. R. laciniata is also desirable, being a free grower of stately habit, and producing its bright yellow flowers in great abundance. The Rudbeckias thrive well in ordinary garden soil, but they are partial to a position which allows them plenty of light.

An imposing mass of green and white is afforded by Parthenium integrifolium. The leaves are quite large, furnishing the stems to the base of the great flattened clusters of white blossoms, which, individually, are rather insignificant, but very effective in the mass. The plant is about four feet high, and grows luxuriantly in heavy soil. There are only a few straggling flowers remaining on Asclepias tuberosa to remind us of its brilliance in July. It was then one great mound of fiery orange-red blossoms, now replaced by pods which will, later on, give a good supply of seeds—the principal means of effective multiplication. It is a grand plant for dry, hilly situations, and so is Opuntia Rafinesquii, the best of the few Cacti which are hardy in this latitude. This Prickly Pear is ex-

tremely floriferous, the blooms being of a yellow hue with reddish centre.

But a small number of the Asters have as yet shown their blossoms. A. macrophyllus, a species with very large cordate leaves, about two feet high, was the first to flower. Its rays are of a whitish or lilac tinge, and the flowers are now at their best. It was closely followed by A. corymbosus, a similar plant with smaller ovate leaves and white flowers. A. Herveyi and A. ptarmicoides will soon be in full bloom. The ray florets of the former are violet, and those of the latter, which is an exceedingly graceful plant, pure white. The large pale blue flowers of A. Lindleyanus are just beginning to expand, as are the rosy purple blossoms of A. Novæ-Angliæ, one of the most beautiful species in the entire genus.

Solidago arguta is the only one of the Golden-rods whose full complement of flowers has appeared so far. It is a very pleasing plant, about three feet high, and most desirable on account of its early flowering. The flowers are of a lively yellow, leaves bright green, and the habit compact.

Cambridge, Mass. *M. Barker.*

The Water-garden.

AQUATICS are still the centre of attraction with their ever-renewed flowers, variety of color and the general animation which is never so marked in formal flower-beds. The Lotus (Nelumbium speciosum) always commands the first attention, as its noble flowers in the morning sun tower above its foliage, which is quite as noble, while the modest night-blooming Nymphæas hide their faces until the brilliant light is past. No aquatic has been more satisfactory this season than the Lotus, and none has required so little attention. Medium-sized roots have made rapid growth and flowered profusely, and are now established; but it is a question whether it would not be better, where cold winters render them uncertainly hardy, to make shallow tanks, eighteen inches to two feet deep, and plant every season. And yet the Lotus seems difficult to start in some places, and I have had the same trouble here when I buy dormant roots. I find no trouble when planting them in shallow water, and filling up as growth advances. For deeper water, plants with stronger growths and numerous roots can be used with safety. In all cases the water requires to get naturally warm to start active growth. The season was somewhat backward for planting, and it was the latter part of April before the roots above mentioned were planted, but they were flowering well the latter part of July, and will continue for some time. With few exceptions, the flowers are as large as those planted the previous year.

It is particularly necessary to have the tanks and ponds well stocked with fish. In tanks where I had few fish I had an abundance of Dragon-fly larvæ, which punctured the young growth and flower-buds of Nymphæas, and, of course, deformed them seriously when they were open.

One of the most ornamental of the Arrowheads is the double form of Sagittaria Japonica, which is now in flower. It will succeed admirably in a tub that is water-tight, or it may be planted in moist places or on the edge of the Lily-pond. The flowers are pure white, perfectly double, as large as a Carnation, and produced abundantly on a scape similar to that of our native species.

Dongan Hills, N. Y. *Wm. Tricker.*

Francoa ramosa.—The Francoas are natives of Chili and belong to the Saxifrage family. There are but three species, and all are perennial but not hardy here, though they might be successfully cultivated in the more favored sections of the eastern states as they are in some parts of England and Ireland, where they are grown as border-perennials. These introductory remarks are necessary, as I know of no firm in this country that offer either seeds or plants of any of the species. Our seeds were obtained from Mr. W. Thompson, Ipswich, England. The popular name given to the plant in question is Bridal-wreath, owing to the long-branching sprays studded with pure white flowers, and it is surprising that florists have not taken the plant in hand, for it would be invaluable for summer cutting, either for indoor use in vases or for any other purpose for which cut flowers are desired.

Francoas are best grown from seeds which germinate readily, and the plants may be potted off separately and grown on to seven or eight inch pots, as they may require. The treatment given Calceolarias and Cinerarias would suit them well for the winter months. During the following summer the plants will bloom freely, producing as many as twelve sprays to a plant in a vigorous specimen, each spray being about three feet long and flowering for two-thirds of the length. For grouping among other plants, either in the open ground or in the conservatory, nothing can be more admirable than Francoa ramosa, the flowers of which are pure white. F. appendiculata is another species with flowers that have a tinge of red with the white. The sprays are not so erect as in F. ramosa, but spread more freely and produce a very pretty effect when blended with other plants.

The only other species is F. sonchifolia, with which I am not acquainted, but it is said to be equally good, resembling F. appendiculata in the color of the flowers.

The season of flowering has lasted over two months with us, and this is a good time to make cuttings of the offsets from the old plant, many of which can be procured with roots. They may be treated as young seedling plants in every particular, and should flower next summer. Seeds are also produced freely here and may be sown as soon as gathered. As they are small, they may be treated in the same way as the seeds of the Calceolaria.

Melianthus major.—I see Mr. Gerard notes the beauty of Melianthus major as an ornamental foliage-plant. Too much cannot be said in its favor for this purpose. A word should be added as to the way to obtain or propagate the Melianthus. Only those who have tried cuttings know how difficult they are to root. It is rare, indeed, for any one to succeed in raising them in this way. I find that the seeds germinate as readily as those of the Castor-oil-plant, and make fine young bushy plants for use the same season. Our seeds were procured from the same source as the Francoas, and produced a nice batch of plants, one of which was left out last winter in a Rhododendron-bed and carefully protected with leaves, but it died.

In Ireland the Melianthus is perfectly hardy, and it probably would be equally so in many parts of the United States. It would pay some one in the south to cultivate the plant for the production of seeds, as with the Grevillea robusta. There would be a ready sale for the seeds when the plant became better known for use among summer decorative planting. Old roots lived over with us in the cold frame last winter after being lifted and cut back, and are now in the open border. With regard to Grevillea robusta a reliable English firm states that "seedlings are easily raised by those who can exercise patience, but we do not know any seed—not even the Auricula—which is so long and so capricious in germinating." They probably have to depend on seed from New South Wales, while seeds obtained here from trees growing in Florida germinate as freely as Radishes. Seeds that are imported from the antipodes are difficult to manage, and rarely germinate well, if at all. We have tried many kinds, but with indifferent success.

South Lancaster, Mass. *E. O. Orpet.*

Tradescantia Warscewicziana.—The larger number of the greenhouse species of Spiderworts are cultivated for their ornamental foliage, but the species under notice not only deserves to be cultivated for its foliage, but also for its beautiful flowers. The plant in flower here is only a small one with a single stem, and was obtained from the Botanic Garden, Edinburgh, about twelve months ago. When the plant gets older it forms a branched sub-arborescent, stout stem, with recurved leaves, having a good deal the appearance of an Aloe. The leaves are about eight inches long, narrow-oblong, acuminate and sessile. The flowers are of a bright purplish rose color, and are produced on a densely crowded branched panicle. Although the flowers are small they are very effective, owing to their density, and as they do not all open at the same time, but in constant succession, the blooming season is of long duration. The cultivation of this plant is very simple; it will grow in any rich, open soil, but needs plenty of water at the roots. This is really a good greenhouse plant, and deserves a place in every collection, especially when it is old enough to form a branched stem. It can be increased from cuttings.

Costus igneus.—Although this plant was introduced from Bahia in 1882, it has not become common, and is very little known in gardens in this country. There is no reason why this Costus should not become a popular plant, as its cultural requirements are very simple. If potted in ordinary compost and given the same treatment as the general run of stove-plants it will both grow and flower freely. At this season of the year the bright orange-red flowers, which are different from any other of its associates, stand out conspicuously among stove-flowering plants. The roots of this plant are thick and fleshy, and they form a strong crown from which the stout, erect stems are pushed up to a height of from

eighteen inches to two feet, and are terminated by the head of blossoms. In the cone-like head of blossoms the flowers do not all open together, so that the flowering season is prolonged. The individual flowers are one and a half inches in diameter, and in color bright orange-red, two or three flowers are open together on the same stem, so that when a large plant is obtained they present a showy appearance. Like most of the other members of this genus, this species has also beautiful foliage, which is of a bright green color. It can be easily increased in spring by dividing the roots.

Botanic Garden, Cambridge, Mass. *R. Cameron.*

Correspondence.

Some Questions About Taste.

To the Editor of Garden and Forest:

Sir,—I have read with care your editorial on the subject of "Taste Indoors and Out," and beg to ask a few questions on a subject so fraught with interest to all who seek to beautify their places in the right spirit.

To begin with: How are we to know what is right and what is wrong? We do not all have a landscape-architect at hand to consult, and he is at best an expensive luxury, then what is to be the criterion of excellence? Taste is so much a matter of individual judgment that one person likes what another hates, and we are very unwilling to take another's ideas, unless we are quite convinced that he is an authority. You are right in saying that it is a good thing for women to interest themselves in this subject; but how are we to know what is unbeautiful from the highest standpoint? Our views about what constitutes an attractive drawing-room arrangement differ very widely, and there we are in a sense at home, but one woman likes ornament and succeeds in it; another disdains it, and produces a dignified and interesting effect without it; and it is more or less the same in our grounds.

Now, can you not tell us what to avoid and what to aim for in our gardens and places, and by what means we can attune our minds to such manliness of conception as shall produce a good result even on an estate? Are we women to be confined to the petty and the pretty forever, or may we not aspire to the loftier walks of landscape-gardening, even as some of us venture to try issue with senior wranglers in the higher mathematics?

Admitted that women are deficient in creative ability, where is the school in which we can learn at least the rudiments of an art so important as the proper planting of our grounds? Why can there not be schools of landscape-art as well as schools of architecture for our enlightenment where we can investigate the proper composition of a rockery or the exact formula for planting a bosquet?

If there is a rugged old tree in the neighborhood of my house, how am I to know whether its picturesqueness is in tune or out of key with its surroundings? At just what distance from the house should the natural give way to the formal? If I like a group of boulders on the edge of my terrace instead of a formal wall, how am I to be sure that my taste is faulty, and the authority who prescribes masonry instead of the boulders to be accepted unhesitatingly?

I think the trouble is that there is no law, and hitherto no inspired councils. The fact is, the fathers of landscape-gardening ought to hold such a council and give us the canon, and let it be infallible. I am not of those irreverent doubters who declare that the wisdom of men in council is no greater than the wisdom of each one taken separately; I am prepared to accept the faith devoutly, if only our Vatican will speak and let us know what is true orthodoxy. The trouble is, we are kept running after the Lo, heres! and the Lo, theres! and a dissenter's views are pronounced with as much confidence as those of the regular doctors, so that really we can't help getting "balled up," as the Andover men did about sheol at the time of the great discussion.

What is taste is really almost as hard a question to answer as what is truth, and if we once get on the wrong track there seems to be no reason why we should ever be led into the right one except by some happy accident.

How are we to distinguish taste from fashion, ephemeral beauty from that which is lasting? What is the test to apply to arrangements of trees and shrubbery, in which there is admittedly great variety permissible? There must be something, as there is in art, which makes things good or bad, excellent or violent, apart from individual fancy or the passing mode, and it seems desirable to find out what is the standard to which the wise and willing may repair with complicated problems in composition, and have their doubts solved, and their taste uplifted on the spot.

Mr. Ruskin says that a person may not consider himself a critic in art until he can go at full speed through a gallery and know without stopping which pictures in it are important. I suppose, really, the truly cultivated landscape-architect can go galloping through a country-seat and know that it is dreadful without even looking at it, but minor mortals have to take their Louvres and Luxembourgs moderately and think twice before they know an early Raphael from a Perugino, and it is the same in a garden. I know people who actually like Horse-chestnuts and Purple Beeches, and are capable of planting groups of incongruous trees, and sticking to it that they look well together. How are such to be confounded and reduced to a proper state of mental receptiveness so that they will become capable of taking in new ideas? We all feel that Garden and Forest is doing a great work in that direction, but the more active our minds become the more we are disposed to question our teachers, and ask chapter and verse for the faith that is in them.

Nor do we do this in any carping spirit, but rather that we may ourselves lay hold on truth, not tentatively but with precision, growing in security and knowledge. Probably, if the landscape-gardeners could put their theories into words they would not do it, for it might spoil the business, but it would be interesting if we could get them to tell us what guides them in their decisions, and what we ought not to do.

Most people do not have time to do the requisite thinking to plan their places successfully, and therefore they relegate to a professional what might be an expression of their own individuality if they would put themselves into it with zeal. There is also the difficulty that trees are unhandy things for an amateur to experiment with, and one feels timid about dealing with them in any unconventional way, and so hesitates to make any very unusual disposition of them; neither can they be whisked about for nothing, but require men and money to deal with them successfully. Shrubs are somewhat easier, and what you aim at is more promptly attained; but even in the flower-garden we fail to see much that shows individuality of treatment, or even novelty of effect.

If this is to be a business for women, we really ought to begin at the beginning and understand how to go to work, and the editor of this paper is just the person to give us a few elementary lessons in the profession we are so eager to practice, and apparently in his eyes so little qualified to adorn.

I suppose the true way would be for us to begin with the flower-garden as a sort of primary school, and when we show some real aptitude in that we might be promoted to the intermediate department of shrubs, while only those who were graduates from both these schools would be entitled to go up higher and deal with trees in their proper relations to each other.

As to lessons in taste, those would have to be extras. I doubt if this country is far enough advanced to make a school of taste possible, and yet I am not sure but that it would be as much to the purpose as a school of philosophy. In our modern Athens, a peripatetic professor, illustrating his lectures by walks through the Public Garden and the Back Bay Fens, with occasional excursions to outlying parks, that might serve as a warning or example at will, would be deservedly popular, and we feel that we at least have the men competent to enlighten us if only they had the will.

Hingham, Mass. *M. C. Robbins.*

Plant-labels.

To the Editor of Garden and Forest:

Sir,—Some years ago I wrote to you for advice on the subject of plant-labels, and received a very courteous reply through the columns of your valuable journal. The subject of labels is such an annoying one to the amateur, and seems still to be so far from a satisfactory solution, that I venture to add a suggestion. I enclose a label that has stood for over two years in a most exposed situation, where it was subjected to the full rays of the sun as well as to the rain and cold. It appears to be as legible as when first inscribed; and the black writing on the polished white surface renders it most easy to decipher. The label was bought in Paris, and costs seven francs a hundred at retail. It is of ordinary celluloid and could, I presume, be made more cheaply in the United States. The ink is a patented article, and costs 1 $\frac{25}{100}$ francs per bottle at retail. The completed label would thus cost about a cent and a half. I have not yet found any other label combining to so great a degree the elements of legibility, durability and cheapness. I may add that I have seen these labels used for years in dark and damp wine-vaults without any apparent deterioration in legibility.

I must ask you to return the label, as it is the only one I have, and I desire to use it as a sample in sending for others.

Oakdale, L. I. *C. B. W.*

[The legend on this neat label is perfectly clear, and the ink does not seem to have faded or "run" a particle.—Ed.]

Meetings of Societies.

The Florists at Washington.

THE annual meeting of the Society of American Florists at the national capital last week was more numerously attended than any which preceded it. The report of Secretary Stewart showed that the membership of the society had increased during the year and its influence extended in every direction. Mr. William R. Smith, Superintendent of the Botanic Garden in Washington, was elected President for the ensuing year, and Professor Trelease, of St. Louis, was made Vice-President, and St. Louis was chosen as the place of meeting for next year. Mr. John Thorpe, the Chief of Floriculture of the Columbian Fair, announced that all the floor-space of the great Horticultural Building had been already taken up, and that exhibitors from abroad had shown a greater interest than the florists at home, and had already applied for more than half of the space to be disposed of. The trade exhibit was particularly good, and filled the large lower hall of the Armory where the convention was held. Excellent displays of Orchids and other choice plants were made by Messrs. Pitcher & Manda, of Short Hills, New Jersey, and by Mr. H. A. Dreer, of Philadelphia. The display of Tuberous Begonias by Mr. J. W. Elliot, of Pittsburg, was noteworthy, and so was a collection of Cacti by a southern firm.

We give below condensations of a few of the more important papers read, and will give others in a future number of the paper:

THE PRESIDENT'S ADDRESS.

The address of President Dean was a careful review of the year in its business and cultural aspect. He noted in particular, not only a growing volume of trade, but a demand for a better quality of plants required for bedding, such as Crotons, French Cannas, Tuberous Begonias and aquatic plants. Among the improvements of the year were noticed the adoption of regulations for governing trade exhibits held at the time of the annual meetings. These rules will help managers to classify the exhibits, will facilitate the work of the judges, and enable exhibitors to display their certificates on the evening of the first day. The offering of gold, silver and bronze medals for new hybrids or seedlings, or for the discovery or introduction of new seedlings, will, no doubt, prove an encouragement to floriculturists in the fascinating work of cross-breeding and obtaining new and improved forms. The great improvements made in the Chrysanthemum, the Rose, the Carnation and other flowers is attributable to the high standard adopted at floricultural exhibitions, and the formation of societies for the purpose of improving special plants, like the Rose Society, the Orchid Society and others, was to be commended, since they would prove helpful auxiliaries to the parent society, and it was recommended that at the annual meetings, experts in each specialty should review their work and record the latest developments in their particular fields as a part of the proceedings of the society.

After speaking of the colossal proportions which the business of commercial floriculture had assumed in America, President Dean recommended the establishment of an institution which would afford scientific training and general business education for young florists. Floriculture is a profession which, above most others, requires special training, and the time has come when young men should know more than the mere routine practice of the trade, and should be instructed in the scientific possibilities of plant cultivation. He further recommended the establishment of an experiment station to which florists could refer the vexed questions which constantly arise in their practice. It might be practicable, and, indeed, advantageous, to unite these two institutions so that the students and professors of the college would form together the working corps of the station. No better material could be provided for the laboratory research of the student than that which could be supplied by inquisitive and eager florists throughout the country. An institution like this would become the organized centre of investigation and training, and it would give an impetus to the work of discovery and the dissemination of knowledge of plant life, and would help to establish floriculture in its true basis as a science as well as a business.

In speaking of the approaching World's Fair, President Dean said that the Horticultural Building, now ready for the reception of plants, is the largest one ever erected, and that it behooved the society to see that every aid was extended to Mr. Thorpe so that the exhibit can be made worthy of the occasion and of the country. The main difficulty to be faced is that of obtaining and transporting plants of sufficient size to show well in such an immense building. State and local societies were therefore strongly urged to induce public-spirited citizens who owned desirable plants either to loan or give them to the department.

FUNGOUS AND OTHER ROSE TROUBLES.

Professor Halsted, in treating of this subject, said that the various species and varieties of the Rose have their full share of fungous diseases, no less than 165 kinds which prey upon the genus being recorded in the books. The black spot is a very wide-spread disease of the Rose, first described in 1826, now known in many countries and much dreaded. The foliage when attacked soon develops black spots, and the leaves becoming elsewhere pale shortly fall to the ground. As a result, Rose-houses badly infested show few leaves and fewer blooms. The microscopic structure of this fungus has been fully considered in the first annual report by Professor Scribner, of the United States Department of Agriculture, for 1887. Experiments have been carried on by the New Jersey Station to warrant the assertion that it can be controlled by the carbonate of copper compound, using three ounces of carbonate of copper, one quart of ammonia and fifty gallons of water. The spraying should be done once a week, using a hose and a nozzle that gives a fine spray. The point should be to wet every part of the plant, and yet not drench it. If many leaves have fallen from the plants they should be gathered up and burned. As with many other diseases, some varieties are more liable to the black spot than others. Within the past week the black spot has been observed by Professor Halsted upon a species of wild Rose (Rosa humilis).

Powdery mildew of Rose (Sphærotheca panosa) is one of the oldest troubles of the Rose. This develops very suddenly on the foliage in the greenhouse or outside of it, giving the leaves a powdery appearance and causing them to become more or less misshapen. In a mild form the foliage may be only mealy, but frequently the surfaces become uneven and the whole leaf twisted. A remedy has been found and long applied in the shape of sulphur in one form or another. Professor Maynard, of the Massachusetts Experiment Station, finds a small kerosene-stove the most convenient for this purpose, and the sulphur, by means of it, is boiled in a kettle for two or three hours twice a week, the house being closed during the operation. The only precaution is to use no more heat than is sufficient to boil the sulphur, for should it catch fire it might damage the plants. In the *American Florist*, for July 7th, Mr. John N. May writes that the best way to get rid of the mildew is to close the house about eight o'clock in the morning, run the temperature up to seventy-five, then with a bellows fill the house full of sulphur, let it remain closed until the temperature reaches eighty-five to ninety, then admit air gradually. A constant circulation of air is likewise recommended for Roses at all times. Potassium sulphide, one ounce to two gallons of water, sprayed upon the plants, has proved effective. Gardeners, from long experience, have come to the belief that Rose mildew is induced by a weak condition of the plant, resulting from partial starvation, irregular or excessive watering, and undue exposure to draughts of cold air.

Downy mildew of Rose (Peronospora sparsa) differs in many ways from the one just mentioned. It is less easy to detect, and, being more deeply seated, may do greater damage before detected than the powdery mildew. It is less easy to eradicate because it thrives within the substance, while the Sphærotheca feeds superficially. The Peronospora sparsa is a close relative of many of the most serious mildews, as those of the grape, onion, lettuce, spinach and the rot of the Irish potato. The treatment for this is the same as for the anthracnose, to be mentioned later.

A Rose rust (Phragmidium mucronatum), similar to the rust of wheat, oats and other grasses, is not common in our section of the country upon indoor Roses. It is not unlikely that it may become a pest here, as it now is in California and other states in the Union. The pest has been so violent in its

attacks upon Roses in California that even the canes were blistered, the whole being covered with a mass of orange-colored spores. Cutting and burning all affected plants is the only safe treatment.

A kind of anthracnose (Gloeisporium Rosarum) sometimes attacks the Rose when the leaves are small and pale, and the canes die at the tips. Sometimes the stems may be dead for a foot or more from the extremity. Not infrequently one branch will be dead clear to the base, and sometimes two or more are thus destroyed. The dead twigs show pimples quite evenly distributed over the surface, and from some, a minute, often curved, horn of a reddish color protrudes. When such stems are placed in a moist chamber the whole decaying surface becomes closely covered with numerous almost brick-red masses of spores, and the disease spreads rapidly through the adjoining parts of the twigs that seemed healthy when placed in the moist chamber. The fungus spreads so rapidly that in four days from the time spores were introduced into sterilized sections of Rose-twigs in test tubes the whole of the culture would be covered with the spore masses. This anthracnose appears to be new in that it has not been before studied microscopically.

Eel-worms, or nematodes, often work on the Rose, principally at and in the roots. These microscopic worms are in outline like that of an ordinary eel, and under the microscope are seen in almost constant motion. They cause an enlargement of certain parts of the roots, and by means of these galls or knots are easily detected with the naked eye when a plant is removed from the soil and carefully washed of the adhering earth. In order to get rid of the pest it will be of much assistance to know where the worms come from. They are, as a rule, much more abundant in warm climates than elsewhere, and the unusual abundance of these pests in northern gardens for the past two years is likely due to the lack of freezing of the soil. The greenhouse furnishes the proper conditions for the propagation of the eel-worms, provided they are there to begin with. This naturally raises the question of how they first get into the bed. They may be already in the roots of the plants, but in small numbers, when the plants are placed in the house. To guard against this the roots should be examined as closely as possible for the galls when the beds are set. All galled Roses should be excluded. The nematodes may come in with the earth. They infest a large number of kinds of plants, and it is an easy matter for them to come with the soil. Soil that has not been used for growing plants in the garden is not necessarily free, but may, if taken from a pasture or meadow, contain many nematodes. Then, again, they may be taken with the manure that is used. Cold, in excess, will probably destroy the worms, and likewise a high temperature is fatal to them. Both of these conditions may be impracticable to apply to the soil, the one being impossible in some cases, and the other too expensive. Rose growers might make the experiment of heating the soil of a small portion of the bed before setting the plants and satisfy themselves if such a treatment will pay. If manure is the chief vehicle of the worms it may be possible to grow Roses without so much of this constituent of the rose-soil. It may be that Roses can be grown with a burned soil to which all the necessary elements of plant-food have been added in the form of commercial fertilizer. The fact is, that the worms are doing much damage. When they are once in a plant there is no known way of driving them out. New conditions may induce the formation of new roots and a sickened plant may revive, but recovery is not usually to be expected. It is possible that some substance may be put upon the soil that, while not injuring the Roses, may kill the worms not already in the plants. Lime has been thus used and with favorable results. It is sprinkled upon the surface of the bed or better mixed with the soil, and each watering will tend to bring it in contact with the tender bodies of the worms. It is not unlikely that some fertilizing compound may be found that will furnish food for the plants, and at the same time deal a death-blow to the nematodes. Kainit may thus prove an efficient remedy, and it only remains for some enterprising rosarian to take the matter in hand and make a test of it. All that has been said regarding the habits of the Rose eel-worms applies equally well to those of the Violet, Coleus, Lantana, Bouvardia, Geranium, and a long list of other plants that are frequent or occasional victims to the same trouble. The treatment will vary with the nature of the plant, whether annual or perennial, woody or succulent, large or small.

FLORICULTURE FOR CHILDREN.

Mr. Robert Farquhar, of Boston, read a paper to show how and why children should be trained to love and cultivate flowers. He argued that we could either stifle or strengthen the love of nature which was implanted in every young heart. If we encouraged and cultivated this love the mind of the growing child would be opened to the beauties of nature, and we should in this way provide for it a means of healthy exercise out-of-doors and a source of delightful recreation all through life. Children should have gardens of their own to care for, and they should be instructed in garden practice. They should be allowed to sow the seeds and care for the plants themselves, although they should be directed in all these operations. Florists who do business in villages and towns enjoy opportunities for doing effective work among children by explaining to their young visitors the manner of propagation by sprouting seed, or by setting out the young plant with its newfound rootlets from the cutting-bed. Subjects for explanation are ever at hand, and the florist who takes pains to instruct his little visitors will often make friends for life, and probably customers, too. The claims of children should never be forgotten in making up the lists of premiums for horticultural and agricultural fairs. Prizes should be given for plants grown by them and for bouquets and collections of wild flowers made by them.

Village improvement societies are doing excellent work in many sections. Some have distributed seeds and plants to the school children with most satisfactory results; florists should profit by this example. Any florist who so wills can begin an effective village improvement society of his own without expense of time or money. Usually the unsalable surplus of bedding-plants is thrown away at the end of the planting season. Why not give them away to the school children? Let the teacher make it known that at a certain time the distribution will be made. When the eager company has assembled it will take but a few minutes of time to give one or more plants to each. Could a happier disposal of stock, useless to the florist, but valued by the children, be made? The satisfaction experienced will more than pay for the inconvenience, and the giver has made an effective and enduring advertisement. Unquestionably, the greater number interested in floriculture the larger will the demand become for both flowers and plants. Children soon grow up into patrons and are worth cultivating if for business only.

Members of this society should make a united effort to have the claims of floriculture for children, and kindred subjects, recognized in all our schools.

The merchants, lawyers and ministers who usually make up our school committees rarely seek to influence education in the interests of horticulture or agriculture. It is book-learning from beginning to end. As a consequence, we have a large surplus of middle-men, and men who live by their wits. Small wonder, then, that a large proportion of our best all-round gardeners originally came from abroad. In most European countries school-life fosters a practical acquaintance with Nature. Our children here love the beauties of nature as dearly as any, and our schools should foster such love instead of checking it. As an agricultural country America stands in the front rank, and the prosperity and wealth of the whole country depend upon the prosperity of those who till the soil; but these facts are entirely lost sight of in our schools; at least, no training is provided which bears directly upon them.

On this side of the Atlantic we justly pride ourselves upon being in advance of European countries in most attainments. We are very far behind many of them in the important matter of horticultural education of children. In France there are over twenty-six thousand primary and elementary schools where gardening is practically taught in gardens surrounding the school-houses.

In Austria there are about eight thousand of these schools, with from one-half to two acres each of cultivated land around them. The grounds in the rear may be found planted with a large variety of trees; at the sides and front are shrubs and flowers. One may see the teachers and pupils mingling together, studying interesting lessons based upon these plants. It has been said that boys will sooner injure a tree than cultivate it, but Mr. Farquhar said he should not be afraid to risk his trees with the boys educated at such a school.

Our country is young, but it is rich and progressive. The plain old school-buildings are going, and elegant buildings, with costly appliances, are taking their places. But we should not be content with fine buildings, large playgrounds and good teachers. In this country more than any we need the proper setting of ample grounds, filled with shrubs and flowers to bloom from earliest spring till winter. Instead of books alone, we should see to it that our children have ample opportunities for enjoying a lesson from the book of Nature.

Notes.

The tenth regular meeting of the American Horticultural Society will be held at Chicago on September 28th, 1892.

The Minnesota Forestry Association will hold its annual meeting at Minneapolis on the 8th of September, and the American Forestry Association has been specially invited to send a delegation. A large forest-reservation has been asked for in Minnesota, and it is a good field for energetic work.

The bulbs of the Ascension Lily (Lilium candidum) should now be lifted if new beds are to be made. In fact, they should have been lifted in this latitude nearly a fortnight ago, or as soon as the tops were dead and before new roots begin to start. If the lifting is delayed until later, leaves will have been formed which remain green all winter, and the plants will receive a check which they will not get over in a year.

Messrs. Sander & Co. have dropped the varietal name Schrœderiana which was formerly attached to a good variety of Dendrobium Phalænopsis, because many other varieties—some of them superior—have been introduced by this firm. D. Phalænopsis is now known as a very variable yet very beautiful and well-marked Orchid, and a plant of it in Kew just now has twelve flowers on a single spike with numerous buds.

One of the famous great ancient Oaks of the Home Park, at Hampton Court, near London, was recently almost entirely destroyed by fire, although the firemen of the palace were aided in their efforts to save it by the steam fire-engines of Kingston and Surbiton. In local belief this tree was eleven hundred years old; it was declared to be one of the eight largest trees in England, and it measured thirty-three feet in circumference.

In answer to a question, Mr. H. E. Chitty, of Paterson, New Jersey, stated at the recent convention of the American Florists that the best twelve Carnations are: Lizzie McGowan and Silver Spray, white; Grace Wilder, pink; Daybreak, soft pink; Tidal Wave, deep pink, bordering on magenta; Portia and President Garfield, scarlet; Ferdinand Mangold, crimson; J. J. Harrison and American Flag, variegated; Golden Gate and Buttercup, yellow.

The Cardinal-flower which now gleams from the tangled foliage along the banks of mountain-streams, or almost startles one who comes upon it amid the rich green of moist meadow-land, will thrive luxuriantly when lifted and transplanted to higher and drier soil. Some flowers, however, never look happy in trim gardens, and Lobelia cardinalis is one of these. Something of the wild grace and charm which invests it is lost when it is removed from its natural surroundings.

A late number of *The Garden* contains a good colored plate of the Azalea Hexe, which is a hybrid between the Chinese A. amœna and one of the Indian Azaleas. There have been a great many hybrids between A. amœna and different kinds of Indian Azaleas, and since A. amœna is a perfectly hardy plant it would be interesting to know how many of these hybrids have been tried out-of-doors in this country. These smaller-growing Azaleas are of neat habit, forming dense twiggy bushes, and they flower with great freedom.

In the early days of Spanish rule the Vine was extensively cultivated in Honduras, and excellent wine was manufactured there. But the very excellence of the product was the ruin of the industry, for, in the belief that Honduras competition might crowd Spanish wines out of the market, an edict was sent out from Madrid that every Vine in the dependency should be plucked up by the roots. This edict is still in the possession of the Honduras Government, and it is only of late years that Vine-culture has again been established in the country.

"Under the direction of Colonel Frank J. Parker, of Walla Walla," says a Chicago paper, "a large amount of Flax-seed will be planted in Washington and carefully cultivated for exhibition at the World's Fair. The flax will be shown in all stages of growth and manufacture. The fibre will be sent east to be worked up into souvenir fabrics, which will be exhibited in the Agricultural Department and in the Washington State Building. Colonel Parker, who is an enthusiastic advocate of Flax-culture in the state, will bear the expenses of preparing and making the exhibit."

What promises to be one of the finest drive-ways in the country has just been begun at Bayfield, Wisconsin. "This new boulevard," says a western paper, "will extend from Washington Avenue, directly in front of the Island View Hotel, along the lake-shore for about eight miles to the Redcliffe Indian Reservation, and will afford a magnificent view of Bayfield Harbor and the Apostle Islands for the entire distance." It will be called the Dalrymple Boulevard in acknowledgment of the fact that it has been secured, after several years' efforts, by the diligent exertions of Mr. W. F. Dalrymple.

With regard to the Rose display at the current Horticultural Exhibition in London a correspondent of *Gartenflora* recently wrote: "What can I say about the Roses which fill the entire centre of the main hall? This exhibit of Roses was divided into nineteen classes, and one can only declare not merely that each class was richly represented, but that every blossom was worthy of special exhibition. Such symmetry of form and such splendor of color, as one expects only occasionally in exceptional flowers, were here universal. The first prize fell to Mr. F. Cant for a collection of seventy-two different Roses, among which each flower was not merely a picture but a model."

Mr. Carman writes in the *Rural New Yorker* that plants of a so-called White Blackberry, which he received from W. C. Raymond, Bridgewater, Vermont, have ripened fruit. The fruit is of medium size, and the drupelets large and comparatively few. The color is hard to describe, being not white but a pale whitish purple. The berry is peculiarly sweet, juicy and delicious, and as distinct in quality from ordinary blackberries as the flavor of the red raspberry is distinct from that of a blackcap. The plant passed through the winter well, although the last winter can hardly be considered a test. The thermometer drops occasionally to thirty degrees below zero in the part of Vermont where this plant was originally found, and it is therefore probably hardy.

Professor Bailey makes an appeal in *Science* for a broader field for botany, which has become restricted until it is little more than the science of wild flowers. But now that the doctrine of evolution has added a new purpose to the study of natural objects, cultivated plants are especially valuable for the examples they give of variation and of the effect of modified environment and selection. The common view that the variations in cultivated plants are anomalous, and therefore uninstructive, is erroneous. But apart from the fascinations which the cultivation of plants has in the direction of science, this cultivation demands the attention of botanists because horticulture ought to be nothing more than the application of the principles of botany. The fact is that it is quite impossible to separate horticulture and botany by any practical test, and, therefore, a department of botany should comprise laboratories, botanic gardens, greenhouses, orchards, vegetable and ornamental gardens, all maintained for purposes of active investigation rather than as mere collections. Botanists too often care little for gardening, and horticulturists are too often apt to underrate the value of scientific investigation. No man who does not unite scientific knowledge and practical training can appreciate the needs of botany in its broadest sense. No one can be a specialist in all subjects, but the ideal occupant of a chair of botany in the university of the future will have the genius to encourage and direct the work of specialists in every direction, and not until then can the science be actively presented to the student in its fullest possibilities.

The oldest herbarium in the world is in the Egyptologist Museum at Cairo, and consists of an inconspicuous collection of dried portions of plants. These portions of plants and flowers were taken from wreaths and garlands in the coffins with mummies, where they were placed by the ancient Egyptians as death-offerings, and from edible plants which were set in earthen vessels on the floor of the sepulchre as the furniture of the last resting-place of their beloved ones. Many of these floral remains are so well preserved that after being treated with warm water they can be handled like modern herbarium specimens. The colors, too, are preserved in a remarkable way. The most important matter in connection with these plants is their age. The remains of funeral-food are found in tombs as far back as three thousand years before Christ. Five hundred years later grains of mustard-seed, capsules of flax-seed, gourds, lentils, beans, figs, pine-needles, juniper-berries and other edibles are found. The richest acquisitions in leaves and flowers to the herbarium were made from the tombs constructed between the eighteenth and eleventh centuries B. C. Among the flowers chiefly employed in floral decorations for the dead were the blue and white Lotus, the red Poppy, the Oriental Hollyhock, Crown Chrysanthemum, Safflower, Pomegranate-flowers, Willow-leaves, Grasses and Peppermint. Celery-leaves came into requisition later, and onions, leeks and garlic played an important part in the offerings to the dead. One of the general conclusions drawn from this herbarium is that Egypt has sustained no appreciable climatic changes during the last four thousand years.